

CLAIMS

1. A proxy (30) for at least one end-to-end data flow in a network, characterised in that it comprises:

5 an estimation unit (300), for estimating a current minimum data load necessary to occupy a bandwidth available to said flow in said network, said estimation unit (300) outputting a flow's pipe capacity estimation;

 a comparison unit (302), for comparing said estimated pipe capacity with a predetermined capacity threshold;

10 a decision unit (304), for deciding to proxy said flow if said estimated pipe capacity lies above said capacity threshold; and

 a routing unit (306), for routing said flow according to the decision.

15 2. A proxy according to claim 1, characterised in that said routing unit (306) is adapted to route from the network layer of said network to a higher protocol layer of said proxy, data that are to be transmitted through said end-to-end flow if said estimated pipe capacity lies above said capacity threshold.

 3. A proxy according to claim 1 or 2, characterised in that said capacity threshold depends on a processing load of said proxy.

20 4. A proxy according to claim 1, 2 or 3, characterised in that said estimation unit (300) is adapted to take into account local information received from said network and representing the state of said network.

 5. A proxy according to any of the preceding claims, characterised in that said flow's pipe capacity estimation is based on the end-to-end worst-case round trip time and the bit rate available to said flow in said network.

25 6. A node in a wireless network, characterised in that it comprises a unit adapted to route an end-to-end flow from a sending entity to a receiving entity in said network, either directly, or via a proxy, as a function of:

 a flow's pipe capacity estimation, resulting from an estimation of a current minimum data load necessary to occupy a bandwidth available to said flow in said network,

30 a comparison of said estimated pipe capacity with a predetermined capacity threshold, and

a decision to proxy said flow if said estimated pipe capacity lies above said capacity threshold.

7. A node according to claim 6, characterised in that it comprises a proxy (30) according to any of claims 1 to 5.

5 8. A method for proxying at least one end-to-end data flow in a network, characterised in that it comprises steps of:

estimating (40) a current minimum data load necessary to occupy a bandwidth available to said flow in said network, so as to obtain a flow's pipe capacity estimation;

10 comparing (42) said estimated pipe capacity with a predetermined capacity threshold;

deciding (44, 46) to proxy said flow if said estimated pipe capacity lies above said capacity threshold; and

routing said flow according to the decision.

15 9. A method according to claim 8, characterised in that said end-to-end flow is routed from the network layer of said network to a higher protocol layer if said estimated pipe capacity lies above said capacity threshold.

10. A method according to claim 8 or 9, characterised in that said capacity threshold depends on a processing load involved in proxying.

20 11. A method according to claim 8, 9 or 10, characterised in that said estimation step (40) comprises a step of taking into account local information received from said network and representing the state of said network.

12. A method according to any of claims 8 to 11, characterised in that said flow's pipe capacity estimation is based on the end-to-end worst-case round trip time and the bit rate available to said flow in said network.

25 13. A method according to any of claims 8 to 12, wherein said flow is transmitted between a sending entity and a receiving entity via a node in said network, said method being characterised in that said routing step is carried out in said node.

30 14. A method according to claim 13, characterised in that the flow is routed from the node to a proxy, processed in said proxy and sent towards the receiving entity.

15. A computer program product, loadable into a computer, characterised in that it comprises software code portions for implementing the steps of:

obtaining a flow's pipe capacity estimation, resulting from an
5 estimation of a current minimum data load necessary to occupy a bandwidth available to said flow in said network,

performing a comparison of said estimated pipe capacity with a predetermined capacity threshold,

10 performing a decision to proxy said flow if said estimated pipe capacity lies above said capacity threshold, and

initiating a routing of said flow according to the decision,
when the product is run on a computer.